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like ; as you know you and Meesy there does. That was what he meant, I guess.' And the old lady quietly put up her knitting, and prepared to go home." — pp. 227 — 233.

These long extracts will convey a much better idea than any elaborate commendation of our own could have done, of one of the most spirited and original works which have yet been produced in this country.

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ART. IX.—1. *The Second Exhibition of the Massachusetts Charitable Mechanic Association, at Quincy Hall, in the City of Boston, September 23d, 1839.* Boston : I. R. Butts. 1839. pp. 134.

2. *An Address delivered before the Massachusetts Charitable Mechanic Association, at the Celebration of their Eleventh Triennial Festival, and Second Exhibition and Fair, October 3d, 1839.* By JAMES TRECO THICK AUSTIN, Honorary Member of the Association. Boston : Isaac R. Butts. 1839. 8vo. pp. 36.

NOT long since, we had occasion to notice a volume of statistics, published in pursuance of an order of the Legislature of Massachusetts, exhibiting the amount and value of the annual products of industry in the several towns of the Commonwealth.\* That publication excited some surprise at the amount and estimated value of those products, particularly of those which come under the class of manufactures. The exhibition under the direction of the Mechanic Association, of which a description is given in the first of the pamphlets above named, afforded more conclusive proofs of the extent and perfection of the manufactures of Massachusetts, than could be afforded by printed statements or written documents. The great number and variety of articles exhibited, extending to a supply of almost all the wants created by our state of society, — their adaptation to the uses for which they are intended, and to the supply of the constant demand, — and the knowledge, in many cases, of the quantity of articles manufactured, of which only specimens were exhibited, — could not fail to produce on the mind of the observer, a strong impression of the extent, activity, and skilful direction of that industry, which has produced such vast results.

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\* *North American Review*, Vol. XLVII. pp. 255 et seq.

The place selected for holding the exhibition was the hall over the Quincy Market, in Boston. This hall is 520 feet in length, and 50 feet in breadth, with a rotunda of wider dimensions in the centre. In this hall the articles exhibited were systematically and tastefully arranged, in a manner to produce an agreeable effect upon the eye, and, at the same time, to secure a convenient access to each article exhibited. A few of the heavier articles, such as specimens of ornamental work in granite, church bells, &c., were exhibited in an enclosure, outside of the hall. The number of contributors to the exhibition was eleven hundred and ninety-six, of whom a large proportion presented not merely many articles, but a great number and variety of kinds of articles. For example, from the same manufactory were exhibited a large assortment of implements of hardware, or of cutlery, a large assortment and variety of printed and unprinted cotton goods, a variety of cloths, &c., so that the number of exhibitors affords no clue to the number and variety of articles exhibited. In several instances, the same individual exhibited a number of different inventions, for entirely distinct objects.

The exhibition remained open for twelve days, from the 5th to the 23d of September, during which period it was visited by about seventy thousand persons. In this number were included the contributors to the exhibition, the members of the Mechanic Association, with the members of their respective families, and sixty thousand purchasers of tickets, at twenty-five cents each. The receipts from the sale of tickets amounted to \$ 15,000. The obvious effect of the exhibition on the minds of a great portion of the visitors, was gratification, and often surprise, at the excellence and beauty of the specimens presented, of the various productions of industry and art.

The pamphlet published by the Association, consists of the reports of the judges upon the comparative merits of the articles exhibited, and their claims to notice, and to the premiums offered. Upon the recommendations of the judges, twenty-five gold medals were awarded, one hundred and thirty-three silver medals, and two hundred and fifty-four diplomas.

It would occupy much more space than we can devote to the subject, to describe, or even to enumerate, the articles in this vast collection, which were deserving of particular no-

tice. We will merely invite a moment's attention to a few, among the great number which might be selected, as specimens of the ingenuity and skill of the artists and mechanics, whose works were thus submitted to the public inspection.

Among the articles of machinery were several models of steam engines,—one being a finished miniature low pressure engine, of a good model, in actual operation, the work of an apprentice, and another a miniature locomotive engine, which was occasionally put in motion, drawing a train of cars over a circular railroad, on which children, among the visitors, were frequently indulged with a ride. There was also a small steam engine of six horse power, of a simple and compact structure, and neat workmanship, built by Hinckley and Drury, which was kept in operation during the exhibition, for the purpose of giving motion to the other working machinery exhibited. Its boiler and furnace were so constructed as to be placed upon the floor without brick work, and yet little heat was communicated to the room. It occupied little space, and worked with remarkable stillness. The water for the supply of the engine was drawn, by suction, from a well in the neighbourhood. Among the machines, which were occasionally put in motion by this steam engine, were three planing machines, of different forms of construction, a cassimere shearing machine, containing some important improvements on machines previously invented for the same object, a tenoning machine, a dovetailing machine, and a rotary shingle machine. All these, and several other machines exhibited, are capable of affording most efficient aid in the mechanical operations for which they are adapted. The planing machines not only give a smooth surface to the boards or other pieces of timber subjected to their operation, but they fit them to a uniform thickness and exact dimensions, according to the gauge by which they are regulated. The spiral blades of the shearing machine are so constructed, that they grind and sharpen one another. It is adapted to cloths of the finest fabric, and shears with the greatest nicety, at the rate of ten or twelve yards a minute. The tenoning machine not only expedites, in a wonderful degree, but executes with the utmost exactness, portions of the process of making sashes, door-frames, and other similar work. The dovetailing machine is adapted to the making of boxes of almost every description, with great rapidity, forming a neat, exact joint, of remark-

able strength, without the aid of nails or screws. The shingle machine cuts shingles smooth and of entire uniformity, and without waste of timber, with astonishing rapidity. The blocks of timber are previously cut to the proper length, and prepared by steaming in hot water. A machine, with a single attendant, delivered perfect shingles at the rate of two hundred and forty in a minute.

Among the machinery should be mentioned a double cylinder Napier printing press, of a large size, for the printing of newspapers, and a rotary press, for printing cards and billets. This last mentioned press, which was invented by Mr. Voorhies of New York, and improved by Mr. Dickinson of Boston, is a perfect machine for its object. It is little larger than a common coffee-mill, and all its movements are so ingeniously contrived, that the process of printing is performed, while the operator turns the crank of the machine with his right hand, and drops the cards into the hopper with his left. An impression is produced upon the cards in succession, at each revolution of the crank, and, as the cards fall through the hopper into a groove fitted to receive them, they become more accurately adjusted, than if placed upon the types by hand, in the ordinary way of printing. The uniformity in the distribution of ink, and in the impression, is such, as to leave nothing to be desired in the perfection of the work. It is also easily adapted to the printing of notes and circular letters ; and all descriptions of cards and billet paper of the finest texture and polish, are printed by means of it, without any loss of their beauty.

Among other machines deserving of notice, were two knitting machines, of entirely different construction from each other, but both performing the operation of knitting with surprising rapidity. One of these machines is in successful operation, in an extensive manufactory of hose, at Roxbury, and the other is a recent invention, made at Portsmouth, in New Hampshire. Mr. Nicholson's railroad telegraph, and bell-ringer, and his self-adjusting railroad alarm-signal, are also deserving of notice. Of the objects deserving of being mentioned for their exact and beautiful workmanship, are Plympton's standard balances and weights, a sample of which was exhibited by him, similar to those which have been furnished to the State of Massachusetts, and other State governments, in pursuance of the laws for regulating the stand-

ards of weight. In this connexion may also be mentioned Loring's beautiful globes, and a variety of philosophical instruments, such as air-pumps, and electric and magnetic apparatus.

Among the inventions deserving of particular notice, was a dynamometer, for the measuring of steam or water power, by S. Batchelder, Esquire, of Saco. This is an instrument which has long been a desideratum in practical mechanics. It is on a principle entirely novel, yet so simple, that it is no sooner seen than it is acknowledged to be fully adapted to its object. It may be made of any dimensions or strength, suited to the degree of power to be measured; and by merely placing it in the line of communication, by means of a band or gearing, between the water wheel, or drum of the steam-engine, and the machinery to be moved, the power exerted on the machinery may be exactly measured, by means of a steelyard and weight, which form a part of the machine. There is also connected with it an index to show the number of revolutions of the drum, in a given time, which being observed, together with the weight, the data are obtained for computing the number of pounds which would be raised one foot high per minute, by the degree of power exerted at the time upon the machine, and transmitted through it to the working machinery. Whether we regard the utility, the ingenuity, or the simplicity of this machine, it must be ranked in a high class of inventions, as rendering that easy of attainment which was before impracticable by any process universally applicable; and we are a little surprised, that, in the liberal number of premiums awarded, no higher testimonial of approbation has been bestowed upon it, than the award of a silver medal.

To proceed to another class of articles, specimens of the produce of some of the most extensive branches of industry, we would enumerate a few of the great number of samples of excellent broadcloths and cassimeres. Among these, the cassimeres manufactured by the Middlesex Company at Lowell were beautiful specimens of this branch of manufacture. So too were the cassimeres of the Neponset Company, at Canton, the broadcloths of the Hamilton Woollen Company, at Southbridge, and of the Woollen Company at Northampton, and the satinets of the Amesbury Company. Among the articles which attracted great attention for their

remarkable fineness and beauty of manufacture, were the flannels of the Amesbury Flannel Company, and also of the Ballard Vale Company, at Andover. A description of these last specimens we copy from the award of the judges.

"The committee have chosen to speak of the goods under the two last numbers in connexion ; and they are unanimous in pronouncing them the most beautiful and perfect specimens of flannels, in all respects, that they have ever seen, whether manufactured in this country or any other. And the goods from these two establishments possess such equal merits, that they hesitate to declare a preference between the two parcels. They are both beautifully spun and finished, even throughout, each piece of regular width, made of superior stock, and the colors of the scarlets and yellows are excellent. After very particular examination, they would class them as follows ; — Of the gauze and white, they give preference to those from the Ballard Vale Company ; and of the colored and twilled, to the Amesbury goods. They cannot well imagine a more perfect article of the kind, than the twilled, last referred to ; nor can they conceive of a more delicate and beautiful specimen of woollen manufacture, than is exhibited in the two pieces of gauze from the Ballard Vale Company. To test the extreme delicacy of this article, they unrolled one of the pieces, and although it is thirty-six inches wide, they drew several yards of it, list and all, through a lady's finger ring, with the greatest ease. The piece contained twenty-one yards, and weighed but three pounds. The committee are informed, that the goods from the Ballard Vale Company are such as they are daily making, and were not made especially for exhibition ; and that the stock from which the Amesbury goods were made, was selected from such as is constantly used at that establishment. Both lots were made from American fleece wool."

There were presented, from the New England Worsted Company, at Saxonville, specimens of bockings and kerseys, and also of worsted yarn, — the first of the kind manufactured by machinery in this country, and the work of ingenious machinery invented by S. Couillard, Jr. There were, also, fine specimens of blankets, from the Mechanics' Company at Rochester, in New Hampshire. Some very curious samples were exhibited, of water-proof cloths, from the Water-Proofing Company, at Lowell. The cloth thus prepared, whether broadcloth, cassimere, or bombasin, without being in any degree changed in its appearance, acquires the remarkable property of repelling and resisting the passage of water,

although of so thin a texture as to admit the passage through it of air or steam.

The fine specimens of cotton goods, one of the most important and extensive branches of the manufactures of Massachusetts, and one which absorbs a large amount of capital, and employs a large number of laborers, were numerous. Among these were chintz furnitures, from the American Print Works, at Fall River; the chintz prints and furnitures of A. Robeson, at Fall River; the silesias, from the Providence Dyeing Company; the fall prints of the Cocheco Company, at Dover; the blue ground chintz prints, of the Merrimack Company, at Lowell; the jeans, tickings, striped shirtings and camlets, of the York Mills, at Saco; and the sheetings and bleached cottons of the Phoenix and Union Factories, at Peterborough. There were fine specimens of carpeting from several factories; also, from various factories, specimens of painted floor-cloths. There were, also, looking-glass frames; brushes, in great variety; cabinet work, in a large variety; coaches, chaises, and other carriages, of excellent workmanship, and of light and tasteful forms, from various manufactorys; saddles and harnesses, in great variety; hosiery and neck stocks; hats, caps, and furs; confectionery, of which there was a brisk consumption during the exhibition; soaps and perfumery, in great variety; agricultural implements, in a large variety, comprising vast improvements on those still in general use in many parts of the country; blocks, pumps, and cooper's work; cannons, rifles, and other firearms, and swords; boots, shoes, and leather; specimens of printing, in surprising variety, and of great beauty, exhibiting a remarkable progress in this art within a few years; types, and stereotype castings; writing and printing paper; iron and brass castings; hardware, cutlery, and locks, in great variety; fire engines; cordage; and needle-work and embroidery, in an immense variety.

We close this imperfect enumeration with a mention of the musical instruments exhibited. Of these there was a large variety. Among them was a church organ, built by Thomas Appleton, of fine tone and excellent workmanship, to which was awarded a gold medal. There were nineteen pianofortes, all pronounced, by the judges, good instruments; to two of which, made by Chickering and Mackays, and Wilkins and Newhall, gold medals were awarded. There

was, also, a large variety of wind and stringed instruments, to a number of which distinctions were awarded by the judges. The manufacture of musical instruments, particularly of pianofortes, is carried to a very great extent in Boston. And the reputation which they have acquired, from their purity of tone and excellence of workmanship, has secured for them a steady demand, from all parts of the country, and for exportation.

Occasional exhibitions of this kind cannot fail to be of great utility. They bring forth to the public view the best evidences of the state and progress of the arts in the country, and disseminate among the community more authentic knowledge than can be acquired from any other source, of what the industry of the country is capable of producing. They afford the means of comparing the products of our own workshops with those of foreign origin, which are in common use ; and the experiment has fully shown, that they serve to produce an increased confidence in the comparative value of our own manufactures. They afford to artisans and manufacturers the opportunity of observing the progress of improvement ; of comparing their own products with those of their neighbours ; and of discovering improvements which may be adopted by themselves. They, besides, stimulate manufacturers to emulate one another in the quality of their productions, by convincing them, that in proportion as they attain to excellence, they will meet with success. In these, and in various other ways, there is no doubt, that these exhibitions contribute, indirectly, to produce the very advance in the state of the Mechanic Arts, from year to year, of which they afford, directly, the most unequivocal proof.

The Address delivered by Mr. Austin, before the Association, is one of the best of its kind. It is written in an animated and eloquent style, and abounds in seasonable and excellent thoughts. Such a discourse is always well-timed ; but, at the present moment, is peculiarly so. Taking the middle ground of common sense and right feeling, Mr. Austin shows, that the supposed conflicting interests of the various classes in American society are, in fact, blended harmoniously together ; that wealth, capital, must employ labor ; that labor cannot dispense with the aid of capital. His views upon this point are strongly and clearly expressed, and must command the assent of every right-minded working-man, who

reads them. He describes, in glowing language, the amazing results of mechanic ingenuity, and draws a most animating picture of their influence on the fortunes of the human family. The following paragraph struck us as extremely happy.

" It is a cavilling spirit, that makes the luxury of life a subject of complaint because its direct enjoyments are necessarily confined to limited numbers. Indirectly, they extend to all classes. They keep in circulation the vital air of the political system. Hardly will it do for our industrious yeomanry, who are covering the country with the *Morus Multicaulis*, until our silkworms shall out-number the produce of the celestial empire, to rail at the luxury of a silk dress, as an aristocratic distinction. Our splendid manufactories of silver are worse than useless, if it is a sin against democracy to use a silver fork. The coach-maker must change his trade, if the fair daughters of the country may not be indulged with a carriage. The saddlery, which is in such exquisite finish in the Hall of Exhibition, is something like the armour of treason against the republic, if we come to the conclusion, that it is for the benefit of the laboring classes, that every man who rides at all must go bare-back." -- p. 20.

The occasion was an excellent one for inculcating sound opinions ; and Mr. Austin has shown, that he felt the responsibility, which his position in the community imposed upon him, not to let it pass unimproved. His lively and vigorous eloquence was, perhaps, never better employed.

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ART. X.—*Dramas, Discourses, and other Pieces*, by JAMES A. HILLHOUSE. 2 vols. 16mo. Boston : Charles C. Little and James Brown. pp. 296 and 247.

THESE elegant volumes are the ripe production of a mind of high powers and high culture. They are composed of three Dramas, and two shorter poems, with three prose Discourses. Two of the dramas, and one of the shorter pieces, — that entitled "The Judgment," — were published separately, from thirteen to twenty years ago. They were received with great favor at the time, but, the editions being small, have been of late rare to be met with. The tragedy now added, it seems, was written earlier than either of the others, but has lain by